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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/216,378	12/18/1998	RIX S. CHAN	450.250US1	9856

24333 7590 04/03/2003

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EXAMINER

LAO, LUN S

ART UNIT	PAPER NUMBER
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2643

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DATE MAILED: 04/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/216,378

Applicant(s)

CHAN ET AL.

Examiner

Lun-See Lao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Introduction

1. This action responds to amendment filed on 1/28/2003. Applicant's has added new claims 24-30 and claims 1-30 are pending

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4,6-20, 22 and 24-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lambrecht (US PAT. 6,259,792) in view of Denenberb (US PAT. 5,375,174).

Regarding claim 1, Lambrecht teaches that a personal computer comprising (see fig.1 col.2 lines 9-35):

a microphone (see fig.2, 108) for detecting ambient noise; a noise cancellation module coupled to the microphone that generates a noise cancellation signal responsive to the detected ambient noise (see fig.1 col.2 lines 9-45); but Lambrecht fails to teach that a digital signal processor for mixing the noise cancellation signal with an audio signal provided from a desired source for provision to an audio output connection.

However, Denenberg teach a digital signal processor for mixing the noise cancellation signal with an audio signal provided from a desired source for provision to an audio output connection (see col.2 lines 5-20).

Therefore, it would obvious to one of ordinary skill in the art at the time invention was made to combine the teaching of Lambrecht and Denenberg to achieve an audio entertainment system or a communications system can be combined with a noise control system and the system of this teaching to provide a better sound fidelity.

Regarding claims 2-3, Lambrecht discloses that the personal computer of further comprising an optical disc drive for providing the audio signal (see col.2 lines 9-35 and col.3 lines 35-42) and the noise reduction scheme of the noise cancellation module comprises a software program running on a processor (see col.5 line 40-col.6 line 25).

Regarding claim 4, Lambrecht discloses that the personal computer wherein the microprocessor is the central processing unit for the computer system (see col.3 lines 10-22).

Regarding claims 6-7, Lambrecht discloses that the personal computer of the audio output connection is compatible with a standard set of headphones (see fig.2 #108 and col.3 lines 3-12) and the computer system is a mobile computer (see fig.1).

Regarding claim 8, Lambrecht discloses that a method of reducing ambient noise normally heard by a user through headphones when listening to audio provided via a mobile computer system, comprising (see fig.1 and col.2 lines 7-35): detecting the ambient noise (see col.3 lines 50-63); generating a noise cancellation signal based on the detected ambient noise; but Lambrecht fails to teach a mixing the noise cancellation

signal with the audio from the compact disc, wherein the mixed signal is applied to the headphones .

However, Denenberg teaches a mixing the noise cancellation signal with the audio from the compact disc, wherein the mixed signal is applied to the headphones (see col.2 lines 5-20).

Therefore, it would obvious to one of ordinary skill in the art at the time invention was made to combine the teaching of Lambrecht and Denenberg to achieve a communications system to provide a better sound fidelity.

Regarding claim 9-12, Lambrecht teaches that the method of reducing ambient noise further comprising converting the detected ambient noise to an electrical signal (see col.3 line 45-col.4 line 25); detecting the ambient noise is performed using a built-in microphone within the mobile computer system (see fig.1 # 154 and col.3 lines 2-30) and the generation of the noise cancellation signal is done when the optical disc drive is active (see col.2 lines 9-35 and col.5 line 20-col.6 line 47); generation of the noise cancellation signal is initiated manually via a software interface (see col.2 lines 9-35 and col.5 line 40-col. line 50).

Regarding claim 13, Lambrecht discloses that a machine readable medium having machine readable instructions stored thereon for causing a computer to perform the steps comprising (see col.3 lines 10-55): detecting environmental background noise; converting the detected environmental background noise into an electrical signal (see col.3 lines 25-61); generating a noise cancellation signal based on the electrical signal (see col.2 lines 9-35 and col.3 line 45-col.5 line 40); but Lambrecht fails to teach a

mixing the noise cancellation signal with an audio signal for provision to an audio output connection.

However, Denenberg teaches a mixing the noise cancellation signal with an audio signal for provision to an audio output connection.

Therefore, it would obvious to one of ordinary skill in the art at the time invention was made to combine the teaching of Lambrecht and Denenberg to achieve a communications system to provide a better sound fidelity.

Regarding claims 14-15, Lambrecht teaches that the machine readable medium of generating a noise cancellation signal is performed automatically when the optical disc drive is active (see col.3 line 20-col.4 line 56) and; of generating a noise cancellation signal is activated through a software interface (see col.4 lines 5-55).

Regarding claim 16, Lambrecht teaches that a personal computer comprising (see fig.1 #154):

- a microprocessor; memory coupled to the microprocessor (see fig.2);

- a storage device coupled to the microprocessor; a microphone for detecting ambient noise (see col.3 lines 3-61);

- a noise cancellation module coupled to the microphone that generates a noise cancellation signal responsive to the detected ambient noise (see col.3 lines 45-61); but Lambrecht fails to disclose a digital signal processor for mixing the noise cancellation signal with an audio signal provided from a desired source for provision to an audio output connection.

However, Deenberg discloses a digital signal processor for mixing the noise cancellation signal with an audio signal provided from a desired source for provision to an audio output connection (see col.2 lines 5-20).

Therefore, it would be obvious to one of ordinary skill in the art at the time invention was made to combine the teaching of Lambrecht and Denenberg to achieve a communications system to provide a better sound fidelity.

Regarding claims 17-18, Lambrecht teaches that the personal computer of further comprising an integrated display device and computer comprises a mobile computer system having an integrated source of power (see fig.1 #154).

Regarding claims 19-20, Lambrecht teaches that the personal computer of the noise cancellation module is part of the microprocessor (see col.6 lines 5-25) and the personal computer comprises a mobile computer system and the noise cancellation module is provided by the microprocessor (see col.6 lines 5-50).

Regarding claim 22, Denenberg teaches that the noise cancellation signal is mixed with the audio signal (in-coming communication) to cancel ambient noise such that the audio signal is audible through a speaker (see fig.3 (33,32)) coupled to the audio output connection (see col.2 lines 5-20).

Regarding claim 24 Lambrecht teaches a mobile computer comprising:
a microphone (see fig.2,108) integrated into the mobile computer for detecting ambient noise (see col.2 lines 9-45);
a noise cancellation software (see col.5 line 50-col.6 line 50) module coupled to the microphone (108) that generates a noise cancellation signal responsive to the detected

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ambient noise, and having a profile for compensating for keyboard key clicks detected inherently by the microphone, but Lambrecht fails to teach that a digital signal processor for mixing the noise cancellation signal with an audio signal provided from a desired source for provision to an audio output connection for a standard headset.

However, Denenberg teaches that a digital signal processor for mixing the noise cancellation signal with an audio signal provided from a desired source for provision to an audio output connection for a standard headset (see col.5 line 10-25).

Therefore, it would be obvious to one of ordinary skill in the art at the time invention was made to combine the teaching of Lambrecht and Denenberg to achieve stereo headphones to provide a better sound fidelity.

Regarding claims 25-28, Lambrecht teaches that the mobile computer of the audio output connection comprises an analog output port(col.5 lines 10-25); and a digital to analog converter coupled between the digital signal processor and analog output port(see fig.2); and the noise cancellation signal is generated when a source of audio output is activated (see col.1 line 20-col.2 line5); and microphone is a built-in microphone of said personal computer (see col.3 lines 3-15).

Regarding claims 29-30 Lambrecht teaches that the personal computer of noise cancellation module generates the noise cancellation signal based on said ambient noise, said noise cancellation signal being generated in a format suitable to reduce headphone noise in the standard set of headphones connected via the audio output connection (see col.1 line 20-col.2 line 35); and headphone noise comes from a same source as said ambient noise (see col.1 line 20 –col.2 line 35).

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lambrecht (US PAT. 6,259,792) and Denenberg (US PAT. 5,375,174) as applied to claim 1, and further in view of Eatwell (US PAT. 5,828,768).

Regarding claim 5, Lambrecht teaches that a mobile computer comprises a noise reduction scheme system, but lambrecht fails to discloses that the noise reduction scheme includes the digital signal processor is located on a sound board.

However, Eatwell discloses that the noise reduction scheme includes the digital signal processor is located on a sound board (see col.6 line 15-col.7 line10).

Therefore, it would obvious to one of ordinary skill in the art at the time invention was made to utilize the teaching of Lambrecht and Denenberg in to the teaching of Eatwell, so that the system provide a waveform playback device in multi-media computer perform well in noisy environments.

5. Claims 21,23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lambrecht (US PAT. 6,259,792) and Denenberg (US PAT. 5,375,174) as applied to claims 1, 8, and further in view of Markow (US PAT. 6,304,434).

Regarding claims 21,23, Lambrecht and Denenberg differs from claims 21,23 in not disclosing that the audio source comprises a compact disc playing game or music sounds; and the audio from the compact disk comprises music.

However, Markow teaches that the audio source (see fig.3, 380) comprises a compact disc playing game or music sounds; and the audio from the compact disk comprises music (see col.2 lines 10-36).

Therefore, it would obvious to one of ordinary skill in the art at the time invention was made to utilize the teaching of Lambrecht and Denenberg in to the teaching of Markow, so that the system provide an audio entertainment system.

Response to Arguments

6. Applicant's arguments with respect to claim 1-23 have been considered but are not persuasive.

Applicant argued that Denenberg does not teach "digital signal processor for mixing the noise cancellation signal with an audio signal provided from a desired source for provision to an audio output connection" of claim 1 because, while he teaches "anti-noise channels can simultaneously deliver in-coming communications to the wearer ears with the anti-noise", Denenberg does not discuss how this is accomplished.

The examiner respectfully disagrees. Denenberg discusses the implementation in various parts of the disclosure, for example, in col.1 lines 10-35, col.2 lines 5-15, col.3 lines 1-25, col. 4, lines 33-53, and figures 1, 2 and 3. In particular, the noise cancellation signal is taught by the anti-noise signal, the audio signal provided from a desired source met by in-coming communications, and the audio output met by the output from the asynchronous controller 38 to the wearer's ears. Therefore, Denenberg meets the claimed "digital signal processor for mixing the noise cancellation signal with an audio

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signal provided from a desired source for provision to an audio output connection" as claimed. Claim 1 does not require any further details of "how this is accomplished".

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, therefore, it would be obvious to one of ordinary skill in the art at the time invention was made to combine the teaching of Lambrecht and Denenberg to achieve a communications system to provide a better sound fidelity.

Regarding to the argument that the references are directed towards different problems, the examiner's response is that while the respective environments wherein the teachings of Lambrecht and of Denenberg are implemented are different, the technology / problems are the same, which is noise cancellation. It is the teachings regarding the technology, rather than the respective implementation environments, of Lambrecht and Denenberg, that are combined.

Regarding to argument that the use of software to perform the noise cancellation, Lambrecht teaches the limitation (see col.5 line 50-col.6 line 25).

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Jones (US PAT. 6,118,878) is recited to show other related the noise reduction scheme for a computer system.

9. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to: (703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao,Lun-See whose telephone number is (703) 305-2259. The examiner can normally be reached on Monday-Friday from 8:00 to 6:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's

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supervisor, Curtis Kuntz, can be reached on (703) 305-4708.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (703) 306-0377.

Lao, Lun-See
Patent Examiner
US Patent and Trademark Office
Crystal Park 2
(703305-2259)


CURTIS KUNTZ
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TECHNOLOGY CENTER 2600